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ABSTRACT

This paper presents a conceptual model of assessment that defines six sequential, iterative steps: purpose identification; outcomes identification; measurement and evaluation design; data collection; analysis and evaluation; and decision making/action. The conceptual model of assessment closely parallels systematic scientific inquiry, especially the portion of inquiry that corresponds to qualitative research. Therefore, the paper argues that the conduct of assessment based on this model is qualitative research that often takes the form of both action research and institutional research. The paper reviews quantitative and qualitative research paradigms and defines assessment, action research, and institutional research. The conceptual model explains assessment in higher education at all levels of the academy and in regard to all of the academy's ends. Within the parameters of this conceptual model and the purposes of assessment, three primary foci of assessment (classroom assessment, program review, and institutional impact) are discussed. The paper posits that action research and institutional research are the forms of systemic inquiry that support the institution's internal information management and planning needs and the need to meet accountability mandates from external constituencies. It also discusses generalizability, suggesting that generalization is the responsibility of the reader and not the institutional researcher. (Contains 11 references.) (SM)

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ASSESSMENT:
A QUALITATIVE UMBRELLA SHARED BY ACTION RESEARCH AND INSTITUTIONAL RESEARCH

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Introduction

The purpose of this paper is to present a conceptual model of assessment, in which six sequential and iterative steps are defined. The conceptual model of assessment closely parallels systematic scientific inquiry; especially, the portion of inquiry that corresponds to qualitative research. Therefore, in addition to presenting the model in this paper, the conduct of assessment based on this model is argued to be qualitative research that often takes the form of both action research and institutional research.

The conceptual model of assessment to be presented explains assessment in higher education at any level of the academy (classroom, program, institution, etc.), and in regard to all of the academy's ends (academic, administration, support, and services). Further, this universal conceptual model clarifies "assessment" in relation to purposes, outcomes, measurement, evaluation, and decision making. Within the parameters of this conceptual model and the purpose(s) of assessment (formative and summative), three primary foci (classroom assessment, program review, and institutional impact) of assessment are discussed. In this discussion, the authors posit that two types of qualitative research, *action research and institutional research,* are the forms of systematic inquiry that support the institution's internal information management and planning needs, and meeting accountability mandates from external constituencies. In both cases, assessment is the fundamental support function.

We begin our argument that assessment is qualitative research that often takes on the form of both action research and institutional research by reviewing quantitative and qualitative research paradigms, and defining assessment, action research, and institutional research. We then present the conceptual model of assessment and a discussion of generalizability.

Research Paradigms

Research is a structured process directed at the discovery and development of knowledge. Regardless of the form that this activity takes, the creation of valid knowledge can only be the result if the research process is systematic and structured. Specifically, research may be defined as: ***The systematic and objective analysis and recording of observations that may lead to the development of generalizations, principles, or theories.*** Within this definition, the conduct of research takes two distinct paradigmatic forms: quantitative and qualitative (naturalistic). The following briefly reviews the fundamental characteristics of the two paradigms.

Characteristics of the Quantitative Paradigm

The purpose of quantitative research is to describe, predict and control. In this type of research, specific variables are isolated through control of the environment (often through sampling techniques and experimental design) to eliminate the effects of confounding variables and testing their relationship to various behaviors. Four questions guide our review of the quantitative paradigm.

What is truth? In the quantitative paradigm, in the most extreme sense, truth or reality is orderly, lawful, and predictable. Specifically, strict adherence to this paradigm assumes that all behaviors are predictable and that events occur consistently in relation to one another. As such, a cause/effect relationship exists that can explain any behavior, and this relationship can be used to predict and/or control behaviors if one is able to identify and collect the appropriate measures.

Who is studied? Using the quantitative paradigm one does not study individual human beings, but seeks to identify relationships between variables that explain behaviors of groups of individuals, which define specific populations. The key is to accurately define the specific population of interest, and second, to select a sample that accurately represents that population. Sampling error, or not selecting a representative sample, is one source of error in quantitative research and is recognized by the use of conditional or probabilistic parameters when inferring the applicability of the results of the study from the sample to the population.

What is studied? An initial and critical component in quantitative research is to define variables that operationalize or reflect the constructs being studied. Once these measures have been operationally defined, instruments are created to record the measures (data) on the individuals being studied and methodologies are developed to facilitate the collection of data. A primary concern in the development of the data collection instruments and methodology is to isolate specific behaviors and explore their hypothesized relationship to one or more variables of interest. This step in the process introduces a second source of error – measurement error. Instruments and procedures designed to collect the data need to be pre-tested in order to establish their validity and reliability, both in terms of the content being measured and its applicability to the sample (population) being studied.

What can quantitative research accomplish? The primary purpose of quantitative research is the creation of knowledge by testing or confirming theory. Methods are designed to study representative samples in order to make inferences to a population. The results and interpretations of quantitative research are inferred to the population under study within the bounds of a predetermined level of confidence. As such, the researcher never knows in an absolute sense the accuracy of his/her inference. Consistency of results through replication and refinement of the study results in greater confidence about the truth of the findings as related to the population being studied.

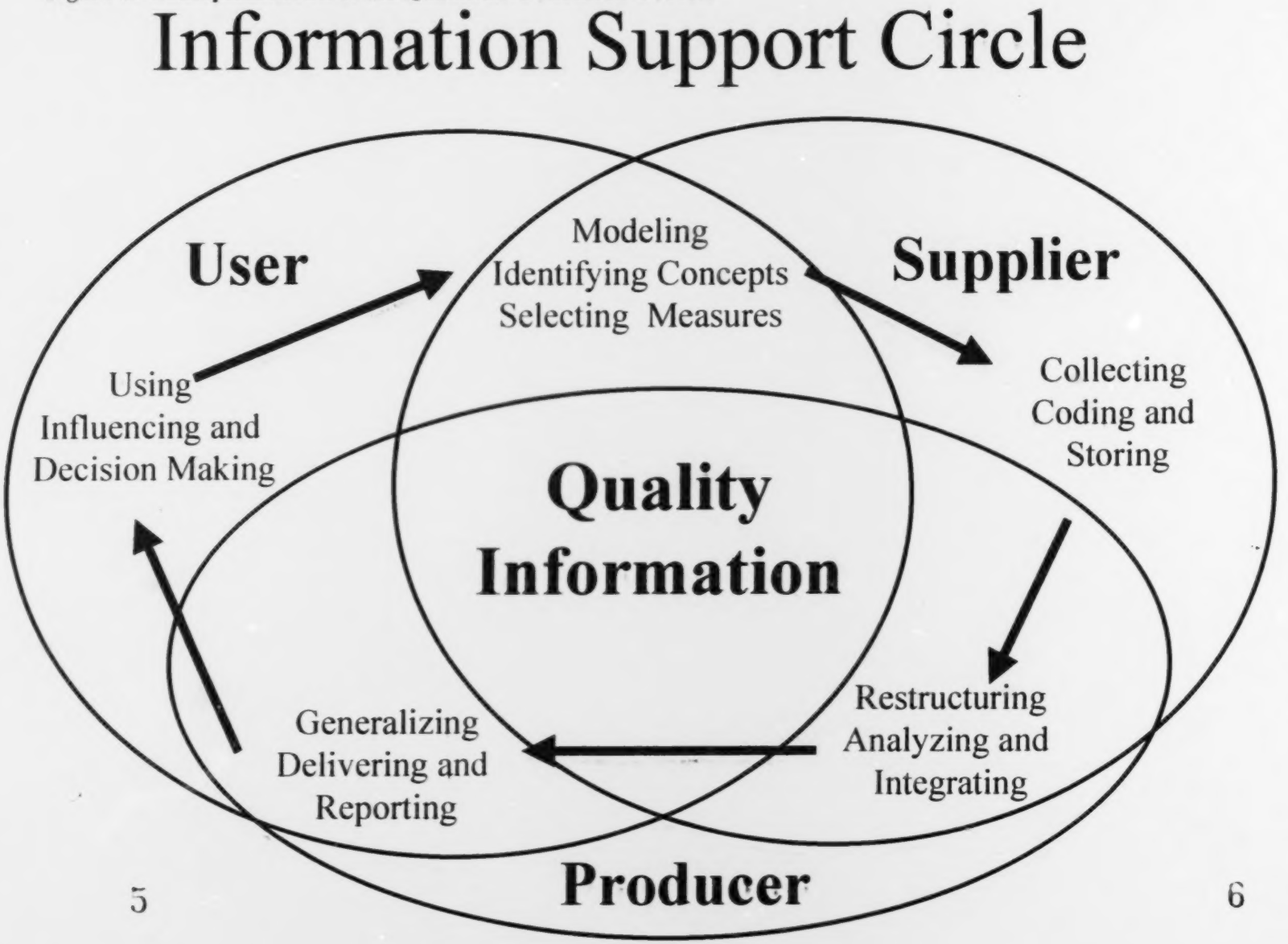
In Figure 1, a conceptual model for the conduct of quantitative research is presented.

Characteristics of the Qualitative Paradigm

The qualitative researcher conducting assessment, action research, or institutional research must consider four philosophical questions. The first philosophical question is: ***"What is truth?"*** Within the qualitative research paradigm, it is not only impossible to establish absolute truth, but relative truth is bounded. Truth is bounded by time and space (contexts) and by individual constructs (perceptions) of truth. Truth is relative to the point in time and the place in which it is observed, and it is relative to the perceptions of the respondents, researcher, and peer reviewer.

The second philosophical question is: ***"What is a human being?"*** Aside from an answer focused on ethical concerns about control groups and experimentation, within the qualitative

Figure 1: Conceptual Model of the Quantitative Research Process



research paradigm the researcher endeavors to observe human beings (as individuals and within systems/organizations) holistically rather than as sums of their parts. No one human factor can be understood outside of the entirety of its "natural" context and the perceptions the humans have of it.

The third philosophical question is: ***"What is the role of the researcher?"*** The researcher who conducts qualitative research must recognize that s/he is the primary instrument for design, data collection, data analysis, and interpretation and reporting processes. The researcher is ever conscious that s/he could and often does influence every aspect of the research. "Trustworthiness" is at risk. Therefore, the researcher is obligated to impose a design structure that increases levels of certainty about relative truth. Further, s/he must take steps to decrease the subjectivity ("unreliable, biased or probably biased") while increasing the objectivity ("reliable, factual, confirmable or confirmed") of the research to increase levels of certainty about relative truth.

The final philosophical question is: ***"What can qualitative research accomplish?"*** Qualitative research is primarily descriptive and descriptive in a limited way. Its contribution to systematic scientific inquiry is that it seeks to describe much detail about a few selected humans rather than a little detail about the entire population.

In Figure 2, a conceptual model for the conduct of qualitative research is presented.

Assessment, Action Research, and Institutional Research as Qualitative Research

Assessment is qualitative research that often takes on the form of both action research and institutional research. In this section of our argument, we define assessment, action research, and institutional research. We then present a conceptual model of assessment and discuss generalizability to illustrate the qualitative nature of assessment, action research, and institutional research.

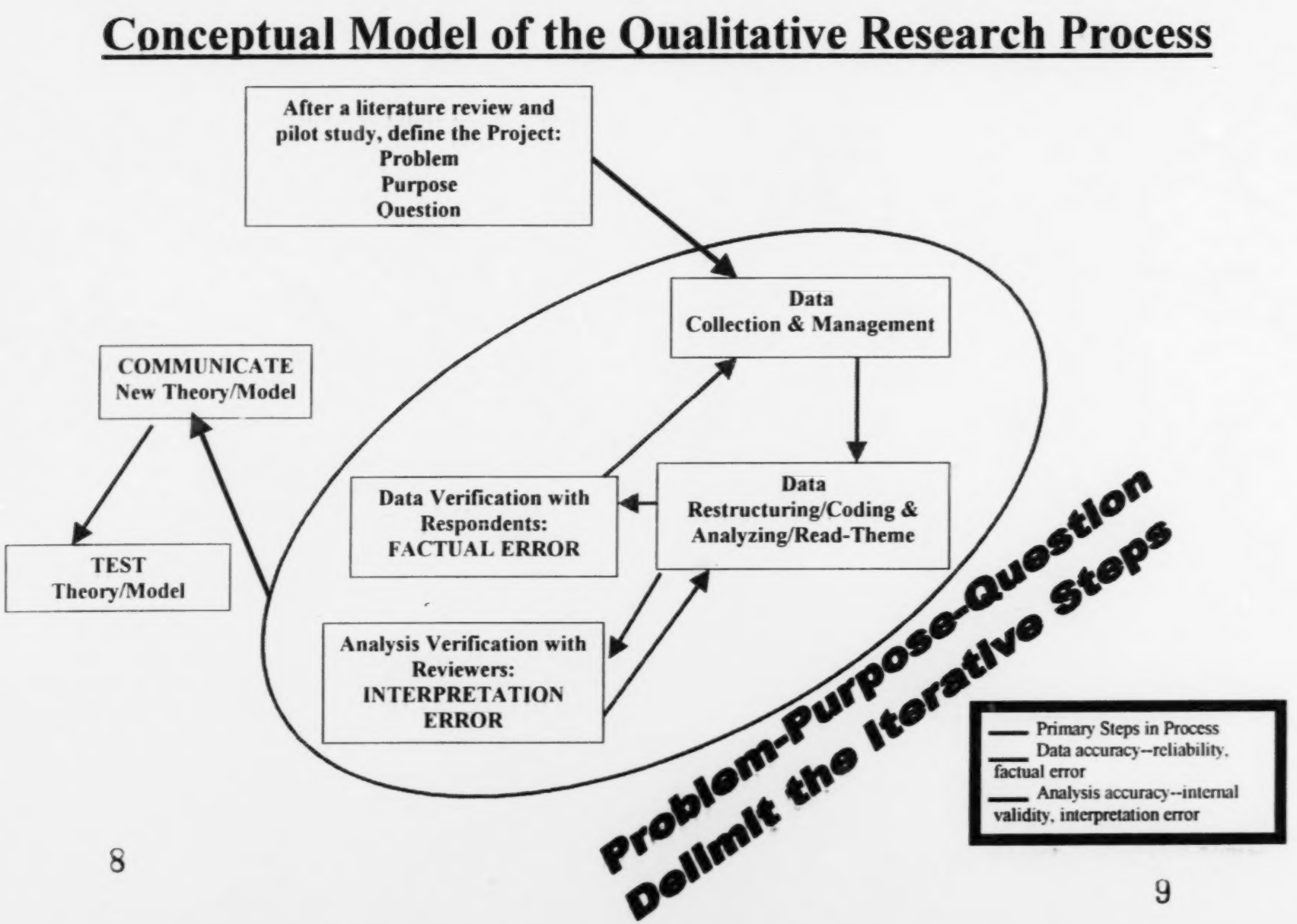
Definitions

Assessment

Assessment is an applied research process, which has been mandated by accrediting agencies, state governing boards, and other funding agencies. Assessment has been defined by different authors to emphasize specific aspects of assessment processes or concerns. Three recent publications that address assessment illustrate this point:

1. "Assessment is the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development" (Palomba & Bannta, 1999, p. 4). These authors focus on Marchese's (1987) emphasis on academic improvement and, specifically, the are focused on student outcomes.
2. "Assessment is any effort to gather, analyze, and interpret evidence which describes institutional, departmental, or agency effectiveness" (Upcraft & Schuh, p. 18). Here, assessment is discussed beyond the institution's academic end and in terms of processes.
3. "...a range of methods for investigating the phenomenon and outcomes of students' learning. The usual purpose of assessment is to make judgments about the effects of instruction or curricula, with an aim toward improving them." "Important here are distinctions from

Figure 2: Conceptual Model of the Qualitative Research Process



potentially related, though differently focused, processes such as measurement, teaching evaluation, program evaluation, and grading students" (Schilling & Schilling, 1998, p 1). The focus of this definition is the methodology associated with assessing academic programs.

While volumes have been written about the processes associated with different strategies for conducting successful assessment, to date a conceptual model that defines assessment in terms of a universal process and purpose has not appeared in the literature.

Action Research Institutional Research

Mills (1999) defines action research as "...any systematic inquiry...to gather information about the ways their particular schools operate, how they teach, and how well their students learn" (p. 6). Mills further states that "Action research is research done *by* teachers, *for* themselves" (p. 6). Action research is not a new concept, originating in the 1930's (Adelman, 1993) it has been refined and expanded, gaining recognition as a viable method of problem solving during the past decade. Regardless of the of the form that the researcher takes it is important to remember that action research is conducted by the individual responsible for the process/activity being studied, the research is conducted as the process occurs, and is relevant only to the specific activity being studied. As such, the results of action research, in and of themselves, are of very limited, if any, importance outside of the environment in which the study has been conducted.

Institutional research is an activity "... conducted within an institution of higher education to provide information which supports institutional planning, policy formation and decision making" (Saupe', 1990, p. 1). Further, Saupe' indicates that "...the subject of institutional research is the individual college, university, or system" (p. 1). While the results of an institutional research study may be of general interest to other institutional research professionals, the only true users of the research's outcomes are at the local institution.

A common objective of these two research activities as they relate to assessing classroom, program and institutional processes and outcomes is obvious—they are both directed at studying specific local issues and problems. While in both action research and institutional research quantitative and qualitative methods are routinely used to study and answer specific questions, we argue that the local focus of these research processes is consistent with the definition of qualitative or naturalistic research. The researcher focuses on a problem or issue specific to a local environment and can not generalize the results of that research outside of this environment. As such, assessment, whether taking the form of action research or institutional research, paradigmatically and practically is a form of qualitative or naturalistic inquiry.

Borland's Conceptual Model of Assessment

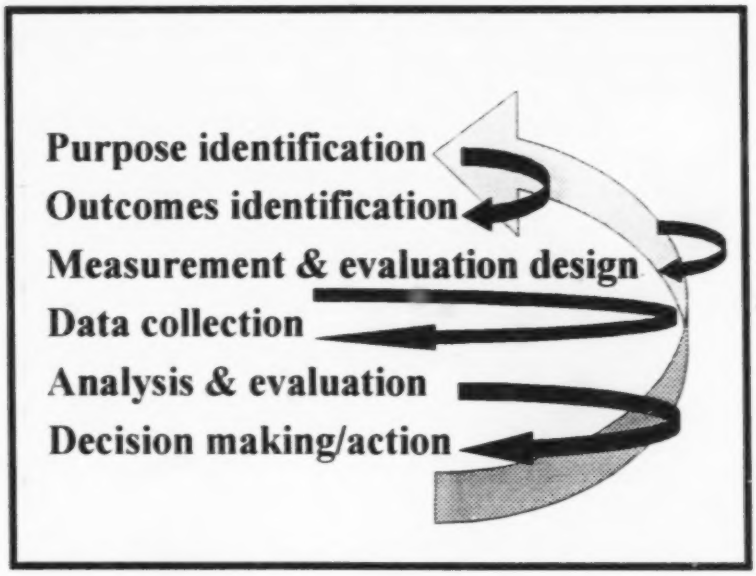
Assessment has been defined (above), by different authors, to emphasize specific aspects of assessment processes or concerns (Palomba & Bannta, 1999; Marchese's, 1987; Upcraft & Schuh, 1996; Schilling & Schilling, 1998). Further, the bulk of the higher education assessment literature is focused on different strategies for conducting successful assessment. To date, a conceptual model that defines assessment in terms of a universal process and purpose has not appeared in the literature, except the six-step model presented by Borland (1999).

Borland's conceptual model of assessment explains assessment in higher education at any level

of the academy (classroom, program, institution, etc.), in regard to all of the academy's ends (academics, administration, and services), and clarifies "assessment" in relation to purposes, outcomes, measurement, evaluation, and decision making. The model closely parallels systematic scientific inquiry and has been used to describe assessment to administrators, faculty, and graduate students who have a wide array of assessment expertise and who are from a wide variety of higher education institutions.

The model is constructed upon the following concepts. First, assessment is purposed-based and all steps of the model are purpose-dependent. Second, assessment is intended to be formative. Third, assessment is not complete until a decision has been made and action taken. Fourth, assessment is an iterative process.

Figure 3: A Conceptual Model of Assessment



Step 1 Purpose Identification

The assessment team (AT) must, in conference with the program representative team (PT), refer to the institution-level purpose statement. This statement is about what the institution intends to see as the result of its collective efforts. More importantly, it is an institutional statement of its paradigm in terms of what is valued. The AT must then, again in conference with the PT, refer to a complementary program-level purpose statement that demonstrates the program's contribution to meeting the institution-level mission/purpose as stated. If there is not a program-level purpose, the PT must write a complementary purpose statement. Why is the program or something about it important in the context of the institution-level statement? What intended results will the program accomplish and what is valued?

Step 2 Outcomes Identification

The AT must then, in conference with the PT, refer to a complementary program-level outcomes statement that demonstrates the program's intended efforts and desired results related to their stated purpose. The PT must, if it has not already done so, state what is being done in an effort

to accomplish the stated program purpose. This first involves identifying purpose-meeting activities and specific desired outcomes that will be utilized to indicate if the program's efforts have indeed reached the intended results and values (Step 1). Care must be taken to state the desired outcomes in operational terms. They must be commonly understood, achievable, and measurable (using quantitative and/or qualitative approaches).

Step 3 Measurement and Evaluation Design

The AT must now determine how to collect, code, store, retrieve, analyze, and evaluate program purpose and outcome related data. The design must address issues of subjectivity and structure to contribute to certainty, and should be finalized before data collection. The PT should assist by giving the assessment team a sense of what data is already available and sources of possible data to be collected.

Step 4 Data Collection

The AT must conscientiously collect (via quantitative and/or qualitative methodologies) appropriate purpose and outcome related numerical and/or narrative data and properly manage it (code and systematically store it for easy retrieval). The data will later be analyzed and evaluated. The PT should provide the data they have already collected and prepare access for the assessment team's collection of other data.

Step 5 Analysis and Evaluation

The AT must now analyze the purpose and outcome (value) related data to make a judgement or evaluation. Appropriate research-based analysis methods must be utilized. As the root "value" in the word "evaluation" suggests, the judgment is made in relation to the stated desired results the program intended to accomplish and what, through its purpose and outcomes statements, it claimed to *value*. Is there merit, worthiness, quality, efficiency, effectiveness in the program's effort and results in relation to the stated purpose and outcomes? How has the program progressed toward what was stated as valued?

Step 6 Decision-Making/Action

The AT must present their evaluation (judgement related to the stated purpose and outcomes ... value) to the PT. The PT must then take two actions.

A) Act regarding the program. Report the evaluation to the program's leading decision-makers who will now lead in making decisions about the program. What must the program staff do about whatever was discovered through the assessment, as it relates to the stated program purpose and outcomes ... that which is valued? They can restate or come to an improved understanding of the purpose and outcomes (Steps 1 & 2). They must revisit and address the program's efforts and processes previously utilized to meet the intended results ... what is valued.

B) Act regarding the assessment process. The PT and/or AT must revisit the understanding of the stated purpose (Step 1) and the stated outcomes (Step 2). Further, they must revisit the measurement and evaluation design (Step 3) used in the actual data collection, analysis and evaluation (Steps 4 & 5). Perhaps, there is a revision of any or all of these five steps to be made that can improve the assessment.

Generalizability

Perhaps the key paradigmatic difference between quantitative and qualitative research is related to the matter of "generalizability." Howard and Borland (1999) in "Qualitative and Quantitative Research in Institutional Research: Complementary or Competitive Paradigms and Methodologies?" said of qualitative research and generalizability,

> ... qualitative research is limited in terms of inferential power (generalizability). The researcher can more freely generalize if the sole consumer of the research report is the sole object of the study. For example, the institutional researcher who conducts a case study related to Greek life at that institution may generalize for that institution's research report consumers. The researcher may not generalize for other institutions' consumers or regarding the Greek organizations that s/he did not study. For outside research report consumers, the researcher may only bring consumers to the point of suggesting how they themselves might, to the degree that their own human experience context and perceptions are identical, find the findings of the report useful (AIR Forum, Seattle, Washington, May 30 – June 2, 1999).

To be generalizable, qualitative research must be trustworthy. Lincoln and Guba (1985) demand that the researcher report findings and interpretations that are considered by the consumer of the research to be "credible to the constructs of the original," which requires them to be believable, plausible, reliable, factual, dependable, and confirmable (pp. 294-319). However, when it comes to what Lincoln and Guba call "applicability" or "transferability," the burden is less with the researcher than with the person seeking to make an application elsewhere. It is not the researcher's responsibility to provide an index of transferability, but to provide the database that makes transferability judgement possible on the part of potential appliers (pp. 296-98, 316).

In Eisner and Peshkin's Qualitative inquiry in education: The continuing debate (1990), Robert Donmoyer and Janet Ward Schofield approach generalizability from qualitative research a bit differently from each other. Donmoyer believes that case studies [such as those qualitative studies associated with action research (classroom assessment) or institutional research (program review, institutional impact)] are rooted in "experiential knowledge." Therefore, they may provide "vicarious" experiences that serve as the "linkage" between the actual case and the generalizing consumer of the case. As a substitute for a direct experience, these case studies provide for the generalizing consumer accessibility, seeing through the researcher's eyes, and a decreased defensiveness [and resistance to learning] (pp. 192-96).

Schofield sees the researcher presenting three "targets" for the research consumer's generalizations. The first target is the "what is" or the typical, common, or ordinary. These are often multi-site studies that challenge the consumer to consider the findings and interpretation as typical. The second target is the "what may be" or the leading edge of change or what the future may likely be as described by the findings and interpretations related to the case. The third target of generalization is "what could be." Here the consumer is challenged to utilize the findings and interpretations in a manner so that the expected ideal can be noted and placed in juxtaposition to the typical. She also describes generalization via qualitative studies as being encouraged in the consumer's mind through the aggregation or comparison of independent studies (209-221).

In any case, Donmoyer and Schofield encourage generalization, but do not absolutely violate Lincoln and Guba's guidance to the researcher that applicability and transferability are the responsibility of the consumer of the research report. Further, their encouraging of generalizability is tempered with ideas of vicarious linkages, what is typical rather than absolute, and what may or could be so,but need not necessarily be so. Thus, qualitative research is not, in an absolute manner, generalizable beyond the specific classroom, program, or institution case, and this is consistent with assessment when viewed as action research and institutional research.

Conclusions

In this paper, we have presented an argument that assessment is an umbrella function that includes action research and institutional research. Further, comparing qualitative and quantitative research paradigms with the methods and objectives of assessment, it is clear that assessment (and as such institutional research and action research) is paradigmatically a form of qualitative research. Methodologically, effective institutional research and action research employs both qualitative and quantitative approaches to the study of an issue or problem. So, other than an interesting academic exercise, what pragmatically does this discussion mean in terms of the practice of institutional or action research, or "so what"?

The answer in terms of the primary purpose of the research, to understand a situation or solve a problem, is nothing. There are however implications for communicating the results of assessment activities and procedures. Because of the local focus of the research, generalization by the institutional researcher to other populations is not appropriate. As discussed above, generalization is the responsibility of the reader. Providing a rich and thick description and a discussion of the research project and findings allows the reader to determine if his or her situation is similar enough to generalize past the original research. However, the important contribution to those reporting assessment activities, institutional research, or action research, is the creation of a conceptual model(s) that provide guidelines for the research of their colleagues.

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